

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A medical device for navigation through anatomy, the medical device comprising:

an elongate body having a proximal end, a distal end, and a longitudinal axis extending at least from the proximal end to the distal end; and

a helical radiopaque marker coil formed ~~from~~ by edge winding into a coil a wire having a substantially non-circular cross section with a greater dimension in the radial direction than in the axial direction, wherein prior to edge winding, said wire has two substantially flat opposite non-parallel sides that are out of parallel by an angle, wherein the process of edge winding the wire into the coil causes the sides to become substantially parallel, said wire being ~~[[and]]~~ made from a radiopaque material;~~and~~

~~said non-circular cross section having a greater dimension in the radial direction than in the axial direction.~~

2. (Original) The medical device of claim 1, said body comprising a tubular member having a plurality of slots configured to make said tubular member more flexible in bending.

3. (Previously presented) The medical device of claim 1, said marker coil being located at or near said distal end.

4. (Previously presented) The medical device of claim 3, said body comprising a tubular member having a plurality of slots configured to make said tubular member more flexible in bending, said body further comprising a core wire, at least part of said core wire being located inside said tubular member, at least a portion of said core wire being located inside said marker coil.

5. (Withdrawn) The medical device of claim 1 further comprising a second coil sharing said longitudinal axis with at least said body.

6. (Original) The medical device of claim 1, said medical device being a guidewire.

7. (Currently Amended) A medical device configured to be guided to a target location in anatomy, the medical device comprising:

a first tubular member having a proximal end and distal end;

a core wire extending proximally from said first tubular member, said core wire being attached with a joint to said first tubular member at least at said proximal end, said joint comprising:

a radiopaque marker coil circumscribing said core wire, said marker coil being at least partially inside first said tubular member, wherein the marker coil is formed ~~from~~ by edge winding into a coil a radiopaque wire having a substantially non-circular cross section, ~~wherein the substantially non-circular cross section has~~ with a greater dimension in the radial direction than in the axial direction, wherein prior to edge winding, said wire has two substantially flat opposite non-parallel sides that are out of parallel by an angle, wherein the process of edge winding the wire into the coil causes the sides to become substantially parallel; and

at least one of solder and adhesive.

8. (Previously presented) The medical device of claim 7, said core wire being metal and said marker coil being metal, said joint comprising solder attaching said marker coil to said core wire and adhesive attaching at least one of said marker coil, said core wire, and said solder, to said first tubular member.

9. (Withdrawn) The medical device of claim 7, said first tubular member having superelastic properties and at least part of said distal end being heat treated to reduce said superelastic properties at said distal end.

10. (Original) The medical device of claim 7 said first tubular member comprising a plurality of slots formed in said first tubular member, at least a plurality of said slots being substantially perpendicular to said axis, said slots being formed in a plurality of groups, and at least a plurality of said groups comprising a plurality of slots at substantially the same location along said axis.

11. (Withdrawn) The medical device of claim 10, wherein at least some said groups, at least one said slot is substantially deeper than at least one other said slot.

12. (Withdrawn) The medical device of claim 7 further comprising a second tubular member circumscribing at least a portion of said core wire.

13. (Previously presented) The medical device of claim 7, said marker coil being formed from wire having a wire thickness, said marker coil having at least a portion of its length with a pitch of at least 1.5 times said wire thickness.

14. (Original) The medical device of claim 7, said core wire having a tapered portion, said joint being located at least partially within said tapered portion.

15. (Withdrawn) The medical device of claim 7 further comprising a second coil having a larger outside coil diameter than said first coil.

16. (Withdrawn) The medical device of claim 7, said core wire having a feature configured to facilitate mechanical interlock of said at least one of solder and adhesive, said joint being located at said feature.

17. (Withdrawn) The medical device of claim 16, said feature comprising of at least one of a step and a ridge.

18. (Original) The medical device of claim 7, said first tubular member having a chamfer at said proximal end.

19. (Original) The medical device of claim 7, said core wire further being attached to said first tubular member at said distal end of said first tubular member.

20. (Original) The medical device of claim 7, said core wire further being attached to said first tubular member at least one location intermediate said proximal end and said distal end.

21. (Withdrawn) The medical device of claim 7, said core wire having a proximal section proximal to said first tubular member, said proximal section having a first outside diameter along at least a majority of its length, and said first tubular member having a second outside diameter along at least a majority of its length, said first outside diameter being larger than said second outside diameter.

22-24 (Canceled)

25. (Currently Amended) A medical device with a stepped core wire configured to be guided to a target location in anatomy, the medical device comprising:

a tubular member having a proximal end and a distal end and a plurality of slots configured to make said tubular member more flexible in bending; and

a core wire having a proximal section extending proximally from said tubular member, and a distal section located at least partially inside said tubular member, said core wire comprising an abrupt change in cross-sectional dimension between said proximal section and said distal section;

said core wire being attached to said tubular member at least at said proximal end, said proximal end abutting said abrupt change in cross-sectional dimension; and

a radiopaque marker coil circumscribing at least a portion of said core wire, wherein the coil is formed ~~from~~ by edge winding into a coil a radiopaque wire having a substantially non-circular cross section, wherein the substantially non-circular cross section has a greater dimension in the radial direction than in the axial direction.

26. (Cancelled)

27. (Previously presented) The medical device of claim 25, said coil being soldered to said core wire, said tubular member being attached at least to said coil with adhesive.

28-52. (Canceled)

53. (Currently Amended) A medical device configured to navigate through anatomy, the medical device comprising:

a tubular member having a proximal end, a distal end, and a longitudinal axis extending at least from the proximal end to the distal end, the tubular member comprising a plurality of slots configured to make it more flexible in bending;

a core wire disposed at least partially within said tubular member and extending proximal therefrom, said core wire having a distal tip;

a joint attaching said core wire to said tubular member at said proximal end of said tubular member;

at least one piece of radiopaque material inside said tubular member, at or adjacent to said distal end of said tubular member; and

said radiopaque material being a helical radiopaque marker coil made ~~[[of]]~~ by edge winding a wire having a substantially non-circular cross section, wherein the substantially non-circular cross section has a greater dimension in the radial direction than in the axial direction.

54. (Withdrawn) The medical device of Claim 53, at least a plurality of said slots being substantially perpendicular to said axis, said slots being formed in a plurality of groups, at least a plurality of said groups comprising a plurality of slots at substantially the same location along said axis, and wherein at least some said groups, at least one said slot is substantially deeper than at lest one other said slot.

55. (Previously presented) The medical device of claim 53, said wire having a substantially greater dimension in the radial direction than in the axial direction after being formed into said coil.

56. (Withdrawn) The medical device of Claim 53 further comprising a mesial coil proximal to said radiopaque material.

57. (Withdrawn) The medical device of Claim 53, said tubular member extending distally from said distal tip of said core wire, said radiopaque material being distal to said distal tip of said core wire.

58. (Original) The medical device of claim 53, said core wire further being attached to said tubular member at said distal tip of said core wire.

59. (Original) The medical device of claim 53, said core wire having at least one abrupt change in cross-sectional dimension, said abrupt change being at or adjacent to said joint.

60-77. (Canceled)

78. (Currently Amended) The medical device of claim ~~[[76]]~~ 1, wherein the wire has a substantially isosceles trapezoidal cross section prior to forming the helical coil and a substantially rectangular cross section after forming the helical coil.

79-80. (Canceled)

81. (Currently Amended) The medical device of claim ~~[[79]]~~ 7, wherein the wire has a substantially isosceles trapezoidal cross section prior to forming the marker coil and a substantially rectangular cross section after forming the marker coil.

82. (Previously presented) The medical device of claim 25, wherein the wire having a substantially non-circular cross section has two substantially flat opposite non-parallel sides that are out of parallel by an angle prior to forming the coil.

83. (Previously presented) The medical device of claim 82, wherein the sides become substantially parallel when the wire is wound into the coil.

84. (Previously Presented) The medical device of claim 82, wherein the wire has a substantially isosceles trapezoidal cross section prior to forming the coil and a substantially rectangular cross section after forming the coil.

85. (Currently Amended) The medical device of claim 53, wherein prior to edge winding the wire into a coil, the wire having a substantially non-circular cross section has two substantially flat opposite non-parallel sides that are out of parallel by an angle ~~prior to forming the helical coil~~.

86. (Currently Amended) The medical device of claim 85, wherein the process of edge winding causes the sides to become substantially parallel when the wire is wound into the helical coil.

87. (Previously presented) The medical device of claim 85, wherein the wire has a substantially isosceles trapezoidal cross section prior to forming the helical coil and a substantially rectangular cross section after forming the helical coil.